

Claims

What is claimed is:

1. A system for evaluating whether an interface between a host device and a target
5 device complies with specifications of an industry standard, the system comprising:
a bus analyzer operable to scan a communication trace transmitted between the host
device and the target device and record logic transitions of signal lines contained in the
communication trace;
a timing event analysis module connected to the bus analyzer to analyze the logic
10 transitions to identify a timing measure present in the communication trace; and
a timing measure analysis module connected to the timing event analysis module to
evaluate the timing measure against a timing measure protocol specified by the industry standard.
2. The system of claim 1, wherein the timing event analysis module identifies the
15 timing measure by detecting a predetermined timing measure condition in the communication
trace, the timing measure condition being predefined by the timing measure protocol.
3. The system of claim 2, wherein the timing measure condition is detected in the
communication trace following occurrence of a plurality of logic transitions, wherein each logic
20 transition occurs on a separate signal line.
4. The system of claim 2, wherein the timing measure condition is detected in the
communication trace following occurrence of a logic transition on a single signal line.
5. The system of claim 2, wherein the timing measure analysis module calculates a
25 length, in time, from a start condition to an ending condition and thereafter compares the length
to an exemplary length specified by the timing measure protocol to determine whether the timing
measure complies with a specification of the industry standard.

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6. The system of claim 1, wherein the industry standard is Small Computer System Interface.

7. The system of claim 1, wherein the timing measure analysis module creates a
5 report detailing whether the timing measure complies with the protocol specified by the industry standard.

8. The system of claim 1, wherein the host device is a host computer and the target
device is a disc drive.

9. The system of claim 8, wherein the industry standard is Serial Advanced
Technology Attachment.

10. The system of claim 1, wherein the industry standard is Fibre Channel Arbitrated
15 Loop.

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11. A program storage device readable by a computer system tangibly embodying a program of instructions executable by the computer system to perform a method for evaluating whether an interface between a host device and a target device complies with an industry standard, the method comprising steps of:

(a) scanning a communication trace transmitted between the host device and the target device;

(b) identifying a timing measure present in the communication trace; and

(c) evaluating the timing measure against a timing measure protocol specified by the industry standard.

12. A program storage device as defined in claim 11, wherein the identifying step (b) comprises steps of:

(b)(i) detecting one or more logic transitions of signals lines contained in the communication trace; and

(b)(ii) analyzing the one or more logic transitions to identify the timing measure.

13. A program storage device as defined in claim 12, wherein the analyzing step (b)(ii) comprises a step of:

(b)(ii)(A) detecting a timing measure condition in the communication trace, the timing measure condition being predefined by the timing measure protocol.

14. A program storage device as defined in claim 13, wherein the detecting step (b)(ii)(A) comprises a step of:

identifying the timing measure condition in the communication trace following occurrence of a plurality of logic transitions, wherein each logic transition occurs on a separate signal line.

15. A program storage device as defined in claim 13, wherein the detecting step (b)(ii)(A) comprises a step of:

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identifying the timing measure condition in the communication trace following occurrence of a logic transition on a single signal line.

16. A program storage device as defined in claim 13, wherein the evaluating step (c) comprises steps of:

(c)(i) calculating a length, in time, from a start condition to an ending condition; and
(c)(ii) comparing the length to an exemplary length specified by the timing measure protocol to determine whether the timing measure complies with a specification of the industry standard.

17. A program storage device as defined in claim 11, wherein the industry standard is Small Computer System Interface.

18. A program storage device as defined in claim 11, wherein the method further comprises a step of:

(d) creating a report detailing whether the timing measure complies with a specification of the industry standard based on evaluation of the timing measure against the timing measure protocol.

19. A program storage device as defined in claim 11, wherein the host device is a host computer and the target device is a disc drive.

20. A program storage device as defined in claim 19, wherein the industry standard is Serial Advanced Technology Attachment.

21. A program storage device as defined in claim 11, wherein the method further comprises a step of defining a specific timing measure type having a plurality of timing measures present in the communication trace, wherein the identifying step (b) comprises a step of:

detecting each of the plurality of timing measures in the communication trace.

22. A program storage device as defined in claim 21, wherein the evaluating step (c) comprises a step of:

- (c)(i) calculating a length, in time, of each of the plurality of timing measures;
- (c)(ii) averaging the length of the plurality of timing measures to render a representative timing measure length; and
- (c)(iii) comparing the representative timing measure length to an exemplary length specified by the timing measure protocol.

23. A program storage device as defined in claim 11, wherein the method further comprises a step of defining a plurality of timing measure types, wherein each timing measure type is associated with one or more timing measures present in the communication trace and the identifying step (b) comprises a step of:

detecting the one or more timing measures present in the communication trace associated with each timing measure type.

24. A program storage device as defined in claim 23, wherein the evaluating step (c) comprises a step of:

evaluating the one or more timing measures associated with each timing measure type against a timing measure protocol specified by the industry standard as specific to each timing measure type.

25. A program storage device as defined in claim 23, wherein the evaluating step (c) comprises steps of:

- (c)(i) calculating a length, in time, of the one or more timing measures associated with each timing measure type;
- (c)(ii) averaging the length of the one or more timing measures associated with each timing measure type to render a representative timing measure length for each timing measure type; and

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(c)(iii) comparing the representative timing measure length for each timing measure type to an exemplary length specified by a timing measure protocol defined by the industry standard as specific to each timing measure type.

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26. A system for evaluating whether an interface between a host device and a target device complies with an industry standard, wherein a bus analyzer scans a communication trace transmitted between the host device and the target device and creates a log file recording logic transitions of signals lines contained in the communication trace, the system comprising:

5 a timing event analysis module analyzing the logic transitions to identify a timing measure present in the communication trace; and

means for evaluating the timing measure against a timing measure protocol specified by the industry standard.

10 27. The system of claim 26, wherein the timing event analysis module identifies the timing measure by detecting a timing measure condition in the communication trace, the timing measure condition being predefined by the timing measure protocol.

15 28. The system of claim 26, wherein the evaluating means comprises:
means for calculating a length, in time, of the timing measure from a start condition to an ending condition.

20 29. The system of claim 28, wherein the evaluating means comprises:
means for comparing the length to an exemplary length specified by the timing measure protocol to determine whether the timing measure complies with a specification of the industry standard.

30. The system of claim 26, wherein the industry standard is Small Computer System Interface.